Web Resources

Department of Ecology Homepage
http://www.ecy.wa.gov

Department of Health
http://www.doh.wa.gov/ehp/default.htm

Hazardous Waste and Toxics Reductions Program
http://www.ecy.wa.gov/programs/hwtr/index.html

Waste Reduction and Recycling
http://www.ecy.wa.gov/programs/swfa/nav/sust.html

Toxics Waste Guide for Homeowners and Small Businesses
http://www.ecy.wa.gov/programs/tcp/olga/olg_faq_pg.htm

Tacoma Smelter Plume Soil Contamination Cleanup
http://www.ecy.wa.gov/programs/tcp/olga/olg_faq_pg.htm

Reducing Mercury in our Environment
http://www.ecy.wa.gov/mercury/

Hanford: Cleaning up our Nation's Cold War Legacy
http://www.ecy.wa.gov/features/hanford/

Saving Puget Sound
http://www.ecy.wa.gov/puget_sound/index.html

Outdoor Burning Information
http://www.ecy.wa.gov/programs/air/outdoor_woodsmoke/residentialburn.htm

Electronic Products Recycling Program
http://www.ecy.wa.gov/programs/swfa/eproductrecycle/

Beyond Waste Project
http://www.ecy.wa.gov/beyondwaste/

Toxics Release Inventory (industrial chemical releases in your community)
http://www.epa.gov/tri/

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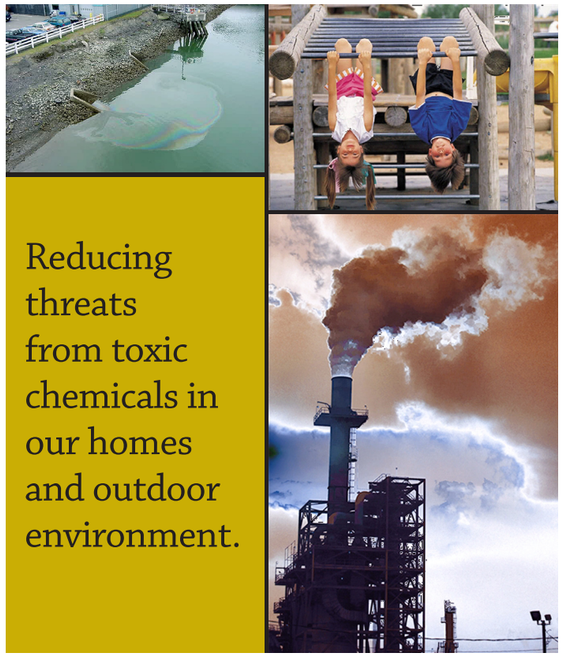
Issue Up Close:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Reducing Toxic Threats



Reducing threats from toxic chemicals in our homes and outdoor environment.

What are toxic substances?

Chemicals and naturally occurring substances that can harm people, animals and the environment are considered toxic. Some household products, like cleaners or yard chemicals, can pose an immediate health threat and require medical treatment if swallowed. However, most toxic substances get into our bodies more gradually. In some cases, our bodies can eliminate these materials without much delay or difficulty. Other substances not only stay in our bodies but continue to build up to harmful levels.

07-01-016 Printed on recycled paper June 2007

Why be concerned?

The more we learn about toxic chemicals, the more we realize they are everywhere – in our air, our water and our soil. They are in the products we buy and use at home and at work. Thousands of chemicals are in use in the United States today. While many of them have added to our quality of life, the effects on our health from thousands of these chemicals are not fully known.

When it comes to toxic threats, the greatest concern is for children. Pound for pound, children breathe more air, drink more water, and eat more food than adults. By just being kids – putting their hands and toys in their mouths, playing on the ground – children are exposed to toxins in ways adults aren't.

Many toxic chemicals, such as mercury, are known to affect children's central nervous systems. Others are suspected of having the same effects. Nationally, large increases are being reported in attention deficit disorders, autism and other conditions that affect children's behavior, memory or ability to learn. An estimated 17 percent of children in the U.S. have a developmental disability. While the link between this disability and toxic substances is not entirely clear, we know that exposure to chemicals like lead, mercury, and PCBs (polychlorinated biphenyls) before and after birth while the brain and nervous system are still developing can cause problems in the way kids learn and behave – and the effects can be long-lasting.

Washington's childhood asthma rates are comparable to the national average for this condition. It's triggered or made worse by toxics in the air we breathe, like tiny particles from diesel cars, trucks and off-road equipment, and from outdoor burning.

Women in Washington, and the United States in general, have much higher rates of toxic flame retardants in breast milk than in other parts of the world. While breast-feeding is the healthiest way to feed newborns, laboratory tests show these chemicals may have neurological effects on children.

At Ecology, we're working with the state Department of Health and other partners to study chemicals that pose significant health threats so we can help citizens and businesses in our state reduce exposures.

In our modern society, each of us unknowingly contributes to toxic chemical exposure. The good news is that, increasingly, we have real options for being part of the solution as well. We can all do simple things to reduce or prevent our exposure, and our children's, to toxic substances in our homes and the outdoor environment.

What you can do to reduce toxic threats

Chemicals and household products have done much to make life more convenient, but they also are a source of pollution that enters our environment. Each of us can take actions to reduce our contribution to this pervasive pollution, by being aware of what we use and how we use it safely, how to use less, or how to use safer alternatives.

For example, each of us could:

- Replace a traditional solvent degreaser with a water-based degreaser.
- Use baking soda and vinegar in place of more hazardous household cleaners.
- Use a semi-permanent hair color rather than permanent.
- Use low or no formaldehyde pressed-wood products.
- Remove items that attract pests around the home to reduce the need for chemicals.
- Take hazardous household wastes to designated local collection sites.
- Choose pump spray containers instead of aerosols. Pressurized aerosol products often produce a finer mist that is more easily inhaled. Aerosols also put volatile organic chemicals into indoor air when you use them.
- Ask for unbleached paper products or products bleached with hydrogen peroxide or oxygen, which produce less pollution during papermaking.
- Purchase a mercury-free fever thermometer, but don't just throw the old one away. Take mercury thermometers to the local county household waste collection site. Call 1-800-Recycle (373-9753) to find out where.
- Pull weeds to reduce the need for herbicides.

If we aren't careful in the way we use the products that make our lives easier, the toxic substances in those products can be carried away into our environment in runoff from heavy rains and storms.

House dust may contain many toxic chemicals, including lead, arsenic, pesticides and PBDE flame retardants (contained in upholstered furniture, mattresses, TVs and computers). Dusting every week with a damp cloth, replacing vacuum filters often, and taking off shoes indoors can help reduce exposure in the home.

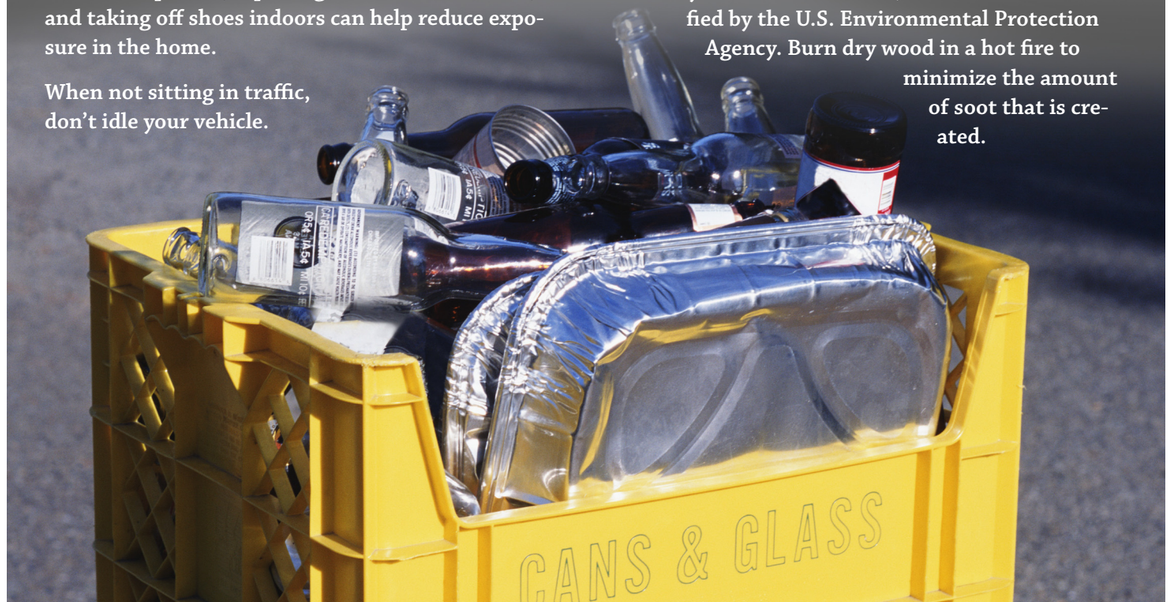
When not sitting in traffic, don't idle your vehicle.

Drive less. Group errands together. Carpool, bike, walk or use public transit where available.

If you change your own oil, recycle it. Never dump it on the ground or down the drain. Or have it changed professionally.

Keep children and pets away from the lawn or playground after lawn products have been applied.

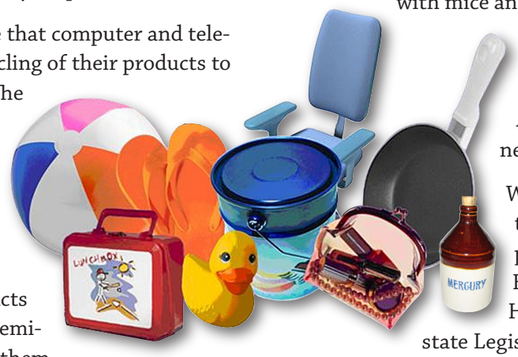
If you use a wood stove, make sure it is certified by the U.S. Environmental Protection Agency. Burn dry wood in a hot fire to minimize the amount of soot that is created.



Reducing toxic Substances in our homes and workplaces

In Washington, we're also working to get toxic substances out of our homes and workplaces. Currently, about 7,000 businesses produce more than 117 million pounds of hazardous waste annually in Washington. Reducing the use of toxic chemicals is a top priority, with a second major focus being to ensure that the waste that is generated is managed safely. We reached our goal to reduce the hazardous wastes by regulated businesses by 50 percent in 2004.

A new Washington law will require that computer and television manufacturers provide recycling of their products to consumers throughout the state. The collection services will be available free to households, small governments, small business and charities by January 1, 2009. Recycling electronic products keep toxic metals such as lead out of landfills and the environment. These products contain other heavy metals and chemicals at hazardous levels that make them difficult to recycle or dispose of safely. For example, there is an estimated four-to-eight pounds of lead in every cathode ray TV picture tube.



Mercury is a known toxic material that builds up in body tissue. In young children, mercury exposure can lead to learning disabilities and damage to the heart and blood vessels. In adults, exposure may cause cardiovascular and central nervous system problems. For decades mercury was used in many household, medical, and electrical devices. Since January 2006, it has been illegal in Washington to sell mercury-containing products such as thermometers, blood-pressure gauges, and items such as toys and jewelry.

Washington started carrying out a plan in 2003 to reduce mercury use and waste. Ecology is working with dentists, hospitals and vehicle recyclers to capture and recycle mercury. We are also promoting programs to safely recycle, rather than dispose of, thermometers and fluorescent lamps and bulbs that contain mercury. The program to recycle mercury-containing auto switches salvaged from cars yielded 16,000 light switches and 36 pounds of mercury within the first few months. Just one gram of mercury per year deposited in a 25-acre lake is enough – over time – to make the fish in that lake unsafe to eat.

Flame retardants are used in everyday items (from computer casings to carpet pads to foam cushions in chairs and couches) to reduce their ability to catch fire. In recent years, however, three widely used flame retardants called PBDEs (polybrominated diphenyl ethers) have been detected in breast milk and people's bodies. Scientists have learned that PBDEs can move from the items in which they were added and begin to build up in the fat tissue of living organisms, such as people and animals. Some PBDEs used as flame retardants have been linked to brain and thyroid problems in lab tests with mice and rats. The levels of PBDEs in people's bodies are doubling every two-to-five years, and are 40 times higher in North America than on other continents.

When directed by the Governor to study ways to reduce the public health threat of PBDEs, Ecology and the Department of Health recommended that the state Legislature ban certain forms of the chemical immediately. The 2007 Legislature banned the use of PBDE's in mattresses beginning in 2008. In 2011, PBDE's will be banned from televisions, computers and upholstered furniture, provided that an alternative flame retardant is found.

Ecology provides free, technical assistance to businesses to help them find ways to reduce the amount of toxic substances they use or generate in the workplace. And, we're helping state and local governments, as well as businesses and private citizens, buy products and build buildings that are "green" and sustainable.

What else do we know about toxic substances?

Thanks to the "Community Right-to-Know" and other reporting laws, we know that hundreds of millions of pounds of hazardous wastes are generated, used or released each year in Washington by regulated businesses. In 2004, 29.6 million pounds of legal toxic releases were reported to the air, land, and water.

Different state and federal programs limit toxic releases into the environment or regulate certain toxic substances after they become a waste product. Permit limits for toxic releases are an important backbone of many environmental air and water programs. Many of these permits require some kind of monitoring and reporting, giving us important information about toxic chemical releases.

Spills of toxic chemicals and other hazardous substances are reported to the state so they can be properly cleaned up, and we continue to make progress on cleaning up contaminated sites, reducing their potential to release toxic materials. Testing of various water ways and sediments also give us important information about toxic substances that might contaminate fish or prove deadly to marine life.

But, for all we know about toxic substances, there is a lot we don't know. Every day, we allow these materials to be released to the environment in very low concentrations, expecting them to be diluted in the air or water And, many of the everyday activities we do as individuals – driving cars, fertilizing our lawns, even using common cleaning products – result in more toxic substances in our air and water. While we know these actions contribute to toxic pollution in our state, just how much is difficult if not impossible to measure.

Throwing away common consumer products such as fluorescent lights or leftover paint with our household garbage puts toxic chemicals in our landfills. Landfills provide an important disposal service but were never intended to be used for toxic chemicals. Household hazardous waste programs are available in most communities throughout Washington to keep these substances out of landfills, but we don't know how much still ends up there.

Most of the thousands of chemicals currently in use have not been tested or approved for their long-term effects on human health, or for how they interact with one another. A complex federal law was passed in 1976 to evaluate new chemicals entering the marketplace. However, most of the chemicals used today were introduced before 1976. Also, under current law, a chemical is assumed to be safe until proven harmful. The federal government, not industry, is responsible to show that a chemical poses an "unreasonable risk" to society.

Reducing toxic substances in the air

Ecology is working to get toxic substances out of the air we breathe by focusing special attention on the two worst pollutants - smoke and diesel exhaust. We're also providing information to Washington residents on how they can reduce toxic gasoline emissions.

We're working with school districts and state and local governments to add pollution control devices to school and transit buses and maintenance fleets to reduce diesel emissions. We're helping provide electricity as a source of cleaner power for overnight stays at large truck stops to reduce unnecessary engine idling. We're also looking for ways to reduce diesel emissions from privately-owned long-haul trucks, construction equipment, trains, port and harbor equipment, and large ocean-going vessels.

Washington law now limits large outdoor burning, such as in fields and orchards, to reduce smoke on nearby communities. When pollution levels in local communities rise too high, it's necessary to limit the use of fireplaces and woodstoves if they are not the homeowner's only source of heat. We're working to raise awareness about the hazards of smoke from both indoor and outdoor burning through public information partnerships. We also are proposing to buy back older high-emissions wood-burning stoves in problem areas and help replace them with cleaner burning models.

In 2005, Gov. Gregoire and the Legislature adopted clean-car legislation that will make vehicles sold here in the future less polluting to our air. Washington also is working to limit airborne mercury by developing a rule that restricts mercury-carrying emissions from coal-fired power plants.

Reducing toxic substances on the land

We're getting toxic substances out of our land by testing playgrounds at schools and childcare facilities throughout the state, and cleaning up soils contaminated by lead and arsenic. We're also expanding the cleanup of contaminated sites in and around Puget Sound.

For almost 100 years, the Asarco Company operated a copper smelter in Tacoma. Air pollution from the smelter settled on the surface soils over a vast region - more than 1,000 square miles of the Puget Sound basin. Arsenic, lead and other heavy metals are still in the soil. Nearly 300 children's facilities within the contaminated area have been tested in King and Pierce counties. Ecology and our partners are working with parents, teachers, childcare providers and the public within the contaminated area to provide information and resources on how to reduce exposure to lead and arsenic in soil.

We are continuing our work on the Hanford Nuclear Reservation to assure that the federal government cleans up 53 million gallons of radioactive and chemically hazardous waste in 177 underground storage tanks, 2,300 tons of spent nuclear fuel, 9 tons of plutonium in various forms, and about 25 million cubic feet of buried or stored solid waste.

Accidental spills of dangerous materials and past business practices have contaminated land throughout the state. Ecology is committed to cleaning up that toxic legacy.

What Department of Ecology is Doing

Reducing toxic substances in the water

Polluted runoff, or stormwater, from rain or snowfall carries oil, fertilizers, pesticides, pet waste, and trash into lakes, rivers and streams and the Puget Sound. It can contain bacteria and viruses that close beaches to swimming and shellfish harvesting. Urban stormwater runoff also includes a multitude of toxic chemicals such as pesticides, herbicides, PCBs and toxic metals.

We protect water quality by requiring industries and others to operate under permits that restrict their stormwater discharges into public waters. Ecology issues stormwater permits to cities, counties, public districts, construction and industrial sites, and will soon issue a permit to the state Department of Transportation to reduce the discharge of pollution, reduce harm to receiving waters, and eliminate illegal non-stormwater discharges. The program also includes controls on new development and re-development to ensure stormwater runoff is properly managed to prevent pollution.

Ecology continues to use more precise sampling and analysis techniques to measure and track trends in the levels of toxics in fish, water, sediments, and industrial wastewater discharges.

Every year, more than 20 billion gallons of oil and hazardous materials are transported through Washington by oil tankers, barges, pipelines, railcars and trucks. Spilled oil is an environmental poison that causes environmental harm as soon as it enters a stream, river, lake or marine waters. Ecology's primary goal is to prevent spills and releases from occurring. We are ready to respond 24/7 whenever immediate threats to public health and the environment occur. We also regulate oil pipelines, refineries, tank farms and vessel shipping companies to ensure that these industries are doing all they can to prevent oil spills and hazardous material releases.

Puget Sound is surrounded by 2,500 miles of shoreline, which is a mosaic of beaches, bluffs, deltas, mudflats and wetlands. Much of the promise and potential of this region is based on natural resources and the industries, tourism and recreation these resources support. Puget Sound has significant challenges, from water pollution and sediments laden with toxic pollutants to sharp declines in populations of salmon, orcas, marine birds and rockfish. Alarming declines in some fish and wildlife populations, and closures of shellfish beds, are signs that Puget Sound is threatened.